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ABSTRACT

This study is an examination of an attempt within the Adult Basic Education Department at College of the Mainland to reduce the anticipatory test fear in normal adult students preparing for the General Educational Development (GED) Test. The experiment covered a time span of 16 weeks and made application of systematic desensitization, a therapeutic technique proper to the writings and practice of Dr. Joseph Wolpe. There is no indication, from the pre-post testing of the control group, that participation in a GED preparation class or the application of the systematic desensitization technique as applied in this experiment increases or decreases either basal trait anxiety or specific academic performance anxiety. (Author/RC)

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A STUDY TO EXAMINE THE EFFECTIVENESS OF SYSTEMATIC DESENSITIZATION THERAPY IN REDUCING TEST FEAR IN A PROGRAM OF GENERAL EDUCATIONAL DEVELOPMENT TEST PREPARATION

PART I

Background and Significance

This study is an examination of an attempt within the Adult Basic Education Department at College of the Mainland to reduce the anticipatory test fear in students preparing for the General Educational Development (GED) Test. The experiment covered a time span of sixteen weeks and made application of Systematic Desensitization.

The therapeutic technique of Systematic Desensitization is proper to the writings and practice of Dr. Joseph Wolpe.

The origin of the experiment was the reporting of the Director of Adult Basic Education as well as the instructors in the GED preparation department. There was extensive testing being used to determine the proper point in time for the students to present themselves to the Testing Center for the GED Test. In many cases, the students were tested as ready to attempt the GED Test but upon taking it were unsuccessful. In interviews of the test interpretation as well as reports to the teachers, the students reported high fear levels which, in their estimation, was the debilitating factor in their attempt of the test. Discussions had in the GED preparation classes themselves revealed much anxiety in the conversations of the students as the exam time approached.

When the decision was made to execute an experiment in fear reduction, the determination had to be made of which therapeutic technique was to be used. After much discussion, it was decided to attempt the experiment using the therapeutic techniques of Joseph Wolpe. Wolpe's therapeutic techniques were primarily related to the process of anxiety

reduction and treat debilitative anxiety reactions as learned and thus potentially extinguishable. This represents the genesis of the experiment from local background but at this point it is necessary to discuss the varying therapeutic techniques of Joseph Wolpe with particular emphasis on his practice of Systematic Desensitization.

Basic Concepts of the Therapy of Joseph Wolpe

The most basic assumption of Wolpe's model is ".....that the behavior of organisms, including human beings, conforms to causal laws...." (Wolpe, 1958, p.1).. It can be easily interpreted from this statement that Wolpe perceives human behavior as functioning fundamentally the same as the behavior of other animals. His own approach to behavior is drawn from the learning theory models of Pavlov, Hull, Thorndike, Skinner, Watson, and Tolman. These theories, essentially, assume that all behavior is learned and can therefore be unlearned or extinguished experimentally. Learning theory deals with changes in the behavior of organisms. Wolpe (1958, p.lx), states that only three kinds of known processes - growth, lesions, and learning - can bring about lasting change in an organism's habit of response to a given stimulus situation. He further assumes that neurotic behavior is learned and that it, therefore, can be eliminated through a process of unlearning. Proceeding from his position that neurotic behavior is learned, Wolpe attempted to apply the known laws of learning to problems of neurotic behavior. The conclusion that "fundamental psychotherapeutic effects follow reciprocal inhibition of neurotic responses," (Wolpe, 1958, p. lx), was supported by both clinical and experimental observations.

Wolpe's experimental observations were made in laboratory experiments involving the conditioning of neurotic behavior of cats. The cats were placed individually into small feeding cages and administered electric shock. Shock intensity was designed to provide a noxious stimulus sufficient to accomplish the learning of neurotic responses to the cage environment without causing harm to the cats. Following this conditioning experience, the cats were induced to eat in the presence of increasingly larger amounts of the anxiety-evoking stimulus (the cage). Eventually they were able to eat directly inside the cage. Originally, the electric shock administered inside the cage produced anxiety responses that effectively inhibited the normal feeding responses of the cats. When the cats were induced to eat in the anxiety-evoking situation, the feeding responses coupled with the discontinuance of electric shock, eventually inhibited the anxiety responses. This process of reciprocal inhibition- "If a response inhibitory of anxiety can be made to occur in the presence of anxiety-evoking stimuli, it will weaken the bond between these stimuli and the anxiety," (Wolpe, 1969, p.15), is a basic principle in Wolpe's theory.

A more detailed examination of Wolpe's cat experiments is to be found in one or another of the books in the reference section as (Wolpe, 1958, 1969) and (Patterson, 1973). The results of the experiments support Wolpe's contention that neurotic behavior is learned and therefore subject to the laws of learning.

The clinical observations made to support the concept of learned neurotic behavior and the process of reciprocal inhibition were many and

varied. Three areas in which clinical observations were made - assertive training, systematic desensitization, and sexual response - served as the basic supports. These three, as well as the technique of aversive therapy will be treated with greater detail in another section of this paper.

Neurotic Behavior and Anxiety:

Wolpe's definition of neurotic behavior, "Neurotic behavior is any persistent habit of unadaptive behavior acquired by learning in a physiologically normal organism," (Wolpe, 1958, p. 32) was formulated from his clinical observations. There is a critical observation to be made in Wolpe's definition. The significance of the words "....in a physiologically normal organism," serve to exclude schizophrenia or any other condition based on an abnormal organic state.

Behavior of an organism can be divided into adaptive and unadaptive responses. Adaptive consequences lead to need satisfaction or avoidance of damage or deprivation. Unadaptive behavioral consequences result in energy expenditure, damage, or deprivation. It is possible that any behavior may be characterized by varying amounts of adaptive or unadaptive consequences and must thereby be measured on a scale of adaptiveness that weighs adaptive consequences against unadaptive ones. To the degree that the resultant behavior can be judged worthwhile, it is adaptive. In the same manner, and since behavioral performances may vary from sample to sample in their degree of adaptiveness, one can refer to the adaptiveness of the habit.

When a behavioral event occurs and it is adaptive, it tends to be reinforced in the environment. Unadaptive responses are normally extinguished due to the lack of reinforcement in the stimulus situation. Failure of unadaptive learned behavior to be extinguished - "its persistence" - is a feature of neurosis (Wolpe, 1958, p.33).

Anxiety is the autonomic response pattern or patterns that constitute part of the organism's response to noxious stimulation. When noxious stimulation alone evokes an anxiety response, it is called unconditioned anxiety. "Unconditioned" responses are used by Wolpe as synonymous with "unlearned" responses. Such responses normally occur as the organism attempts to avoid tissue disturbances or to make avoidance responses. Conditioned anxiety results when a stimulus that would not normally evoke anxiety acts on the organism at a time when anxiety is evoked by a different stimulus. The former stimulus becomes a conditioned stimulus to anxiety. Since there are numerous opportunities in everyday life for the conditioning of anxiety, conditioned cues to anxiety far outnumber unconditioned ones. Some of the antecedents of neurotic (conditioned) anxiety exist in reality, while others exist only in the thoughts of the patient. In either case, the disturbance to the patient by the anxiety-evoking experience is quite real. Wolpe (1958, p. 83-85) also discusses pervasive anxiety. This type of anxiety response is often called "free-floating anxiety," and seems to be evocable through more diffuse or pervasive aspects of the environment. It has a sense of omnipresence.

Unadaptive anxiety is the measure of the severity of a neurosis. It has two dimensions - intensity and duration - and the degree of severity

may be either high intensity anxiety responses or low intensity responses of long duration. The most severe situation is, of course, a neurosis characterized by anxiety responses of high intensity and long duration.

The presence of unadaptive anxiety in any of its forms acts to impair the functioning of the organism. This may occur in many and varied ways. Included among these one might find impaired co-ordination of muscles, embarassment in certain social situations, headaches, interference with sexual performance as, in men, impotence and premature ejaculation and in women, frigidity, as well as a host of other functional impairments.

Treatment

Wolpe's approach to psychotherapy can be characterized by differentiation of treatment techniques and diagnosis. The next section of this paper will explore some of the treatment variations.

Assertive Training

Assertive training is one of the several therapy models utilized by Wolpe. This particular type of therapy is directed toward the patients who in interpersonal contexts are prevented from making rational or reasonable responses due to unadaptive anxiety responses. The definition of the word "assertive" is the outward expression of essentially all feelings except anxiety. "Experience has shown that such expression tends to inhibit anxiety," (Wolpe, 1969, p. 61).

The therapist attempts to cause the patient to emit responses that have been inhibited by unadaptive anxiety. As the formerly inhibited

responses are made, the anxiety that has served as the inhibitor is itself reciprocally inhibited. Such reciprocal inhibition serves to break down the habit strength of the anxiety response and gradually weakens or effectively inhibits the anxiety to the extent that the patient is able to make the interpersonally appropriate response in a given situation.

Instigation of assertive training results from information normally collected in the clinical history of the patient. Wolpe also often finds it useful to ask the patient to describe his behavior when confronted with several interpersonal situations with strangers. A list of these five average situations may be found in The Practice of Behavior Therapy, page 63. They essentially deal with average situations in which an individual should be able to stand up for his rights but is inhibited from doing so by unadaptive anxiety responses. The therapist discovers which situations are characterized by inhibited response patterns and prescribes appropriate responses to be made by the patient in that situation. As indicated early, as the patient makes and then repeats the appropriate response in the anxiety evoking situation, the habit strength of the anxiety bond in weakened. This type of prescription is made for the patient who is judged, (by the therapist), as being capable of confronting the anxiety evoking situation. The particular assertions to be made are individual to each patient but can be divided generally into one of two categories - hostile or commendatory. The patient must never be pushed into making an assertive response which is likely to have punishing consequences.

For the patient who is judged unable to make the assertive response in a real-life situation, the therapist may use another method. This second technique, called "behavior reversal" (Wolpe, 1969, p. 68), has the therapist take the role of a person to whom the patient has developed an unadaptive or neurotic anxiety response. In this setting, one-step removed from reality, the therapist attempts to elicit the anxiety inhibited response appropriate to the interpersonal situation. As the patient "rehearses" the appropriate behavior, the result is, again, a weakening of the habit strength of the anxiety response.

A third tactic mentioned briefly by Wolpe, (1969, p. 70), is called "Lifemanship." Here, through some former knowledge of the anxiety evoking person's weakness, the patient is able to formulate statements aimed at disarming the other person. An example might be a statement made by Olympic swimmer Don Schollander in a television interview. He was asked how he "gained the edge" on certain swimmers who seemed to be at least his equal. He replied that when standing on the starting block, he would occasionally turn to his opponent and make a remark, such as "Your tie string is untied." The remark would so upset the opponent's concentration that he would lose that critical second or so and Schollander might then be able to win the event. This is an especially useful technique in situations where outward aggression by the patient could lead to harmful consequences. An example here would be the interpersonal context of employer-employee relationships.

Sexual Responses

Therapeutic sexual arousal is utilized by Wolpe as an anxiety inhibitor in the treatment of unadaptive sexual responses. The primary use of the anxiety-inhibiting effects of therapeutic sexual arousal is in the treatment of impotence. The behavioral manifestations of this condition are inadequacy of penile erection or premature ejaculation or both.

The use of the sexual response as an anxiety inhibitor must be preceded by the discovery of at what point anxiety related to sexual performance begins. The therapist must also ascertain which factors increase the anxiety. The details of treatment vary from case to case, (Wolpe, 1969, p. 75). Any of several treatment methodologies may be utilized including the use of tranquilizing drugs. The aim of treatment in this situation is to inhibit the anxiety associated with sexual performance through a program of reinforcement of positive feelings related to sexual arousal in the patient on a continuing and progressively increasing schedule. Wolpe notes that the treatment requires cooperative female colaboration. Many patients have such a cooperative partner available as spouses. When all other means of finding an appropriate partner are exhausted, Wolpe (1969, p. 78) suggests the use of a regular prostitute. The alternative can often mean waiting several months for treatment while searching for another partner who will be willing to undergo the discomfort associated with the treatment while maintaining a sympathetic interest in the patient.

The treatment of frigidity by the employment of reciprocal inhibition is also possible. Frigidity, according to Wolpe (1969, p. 84), is an unfortunate term. He suggests that it might be more correct to refer to a varying degree of failure of sexual responses in women. This range might run from absolute frigidity (no sexual response) to high sexual arousal in a woman coupled with the inability to achieve orgasm. He divides, definitionally, frigidity into two distinct types. The first, essential frigidity, which is characterized by a lack of sexual response in relation to all males. This condition may have either an organic or a psychological base. Secondly, he defines situational frigidity as failure of sexual response in relation to a particular male, often the patient's husband.

As in the treatment of impotence, there are individual differences. Many times the use of assertive therapy is the treatment of choice. Several case examples of both the treatment of impotence and frigidity can be found in The Practice of Behavior Therapy. (pp. 72 - 79)

Aversion Therapy

Aversion therapy applies the principle of reciprocal inhibition to deconditioning of motor or thinking habits. It is used in the treatment of compulsions, obsessions, and fetishes. There is also application to "....habits of attraction to inappropriate objects, e.g. sex objects of the same sex" (Wolpe, 1969, p. 200).

Essentially, aversive therapy involves the presentation of the stimulus to a strong avoidance response in context of an undesired

response. Usually this stimulus is strong electric shock. The shock inhibits the undesired response by stimulating the avoidance response. Successive shocks further weaken the habit strength of the undesired response.

Wolpe (1969, pp. 206-208) describes the use of aversive therapy for the treatment of undesired homosexual behavior in extensive detail. The aim of that treatment is, through the use of selective shock, to cause the patient to exhibit avoidance behavior toward males and approach behavior toward females. Aversion therapy is also successful in the treatment of alcoholism and to some extent, drug usage.

There is always a possibility that the undesired behavior exhibited by the patient may result from neurotic anxiety. Consequently, aversion therapy should be considered only after anxiety deconditioning has been attempted through one of the other treatment methods.

Systematic Desensitization

This therapeutic technique most closely resembles the early experiments with cats. The patient is exposed to an anxiety hierarchy of stimulus situations in a controlled relaxation state and is systematically desensitized to increasing amounts of anxiety evoking stimuli. It is assumed that the response to the imagined situations presented in the treatment room will elicit responses similar to those in the real situation.

Treatment is instigated with an interview session in which a history of the patient is collected. This session may also be used to administer the Willoughby questionnaire which is designed to discover disturbances

not revealed in the interview and history collection process. The therapist analyses the information found in the patient history and the answers to the Willoughby questionnaire and assigns the patient the task of developing an anxiety hierarchy. This list will include every situation or thing that the patient can recall which disturbs, frightens, distresses, or embarasses him excluding, of course, those things for which these reactions would represent adaptive behavior. The intent of the anxiety hierarchy is to reveal neurotic or unadaptive responses to stimulus situations.

Eventually the therapist and patient will construct a list of heterogeneous items numbering normally between 10 and 100 items. The therapist will attempt to arrange this list into as many thematic groups as are indicated. The patient will then be asked to arrange the group of items to be used in the therapy session in rank order from the most to the least anxiety-working stimulus item or situation.

Prior to the desensitization sessions, the patient is trained in Jacobson's relaxation technique. (A useful handbook on this technique is Progressive Relaxation Training by Berstein and Borkovec, 1973, Research Press.) In the first desensitization session the patient is either hypnotized or placed in a deeply relaxed state. While in the relaxed state he is told that he will be required to imagine, very vividly, scenes associated with the anxiety-hierarchy list. If he feels any anxiety while imagining these scenes, he is to lift his hand slightly as a signal to the therapist to discontinue the presentation. The weakest items are presented in turn for approximately two or three seconds each. If a

signal is given, the scene is broken off by the therapist immediately. After successive presentations and at the judgment of the therapist, the patient is brought back into full consciousness. A discussion of the events of that session follows and the information gathered in that discussion is used to determine the nature of the next session. Essentially, each of the following sessions involves exposure to imagined scenes of stronger anxiety-evoking items until the patient becomes completely desensitized to the full list or lists. The total number of sessions required varies greatly, but is usually between 10 and 25 (Wolpe, 1958, p. 141).

This treatment methodology is ineffective for the patient who is unable to relax. Hypnotism is the preferred mode of relaxation but if a patient will not or cannot be hypnotyzed but can relax, treatment can be accomplished. When compared with hypnotic desensitization sessions, relaxation alone requires a greater number of sessions and therapy proceeds more slowly. Several case examples of systematic desensitization treatment sessions can be found in Wolpe's writings (1958, 1969).

The basic model of Joseph Wolpe was chosen for this experiment in test anxiety reduction because of its approach to anxiety as learned and thus capable of systematic extinguishing. His particular system of Systematic Desensitization was chosen because of its applicability to the problem at hand. Later in his experimentation (1969), Wolpe made some attempts to apply the use of Systematic Desensitization anxiety reduction to group situations. In these applications, the relaxation training was done in a group setting but the anxiety hierarchies were developed with each subject. This made it necessary to do the desensitization individually.

In the experiment reported here, both the relaxation training and the desensitization were done in a group setting. The basis for this rather new attempt was the fact that the specific fear to be reduced was the same for the subjects and the hierarchies, when arrived at, were non surprisingly, very similar in regard to the consequences of not passing the GED test. The treatment sessions were done in group because if the technique was to work and be applicable for the College of the Mainland setting, the continued use of this in the Adult Basic Education Program would have to be in group; any individual application of so complex a system would be uneconomical.

PART II

Procedures and Results

Basic Hypothesis and Procedures:

This study is an attempt to examine the effectiveness of the application of Systematic Desensitization Therapy to reduce test anxiety and apprehension in a sample of normal subjects preparing for the GED examination at College of the Mainland. The nature of the Desensitization technique has been described in the background study of the theory and application of the theories of Joseph Wolpe. What now remains is to describe the instruments used and the procedures.

The first instrument used to pre and post the subjects was chosen because of its ability to indicate the general anxiety-proneness of the individual. The State-Trait Anxiety Inventory (only the A-Trait scale was used in this study) is a self report anxiety measure developed to investigate anxiety in normal adults. It consists of two scales: the A-State, for how the subjects feel at a certain time; and the A-Trait, for how the subjects feel in general. The authors (Spielberger, Gorsuch, and Lushene, 1970) report the major qualities evaluated by the A-State Scale involve feelings of tension, nervousness, worry, and apprehension. The A-Trait refers to a general anxiety-proneness factor.

The conception of a state-trait theory of anxiety (as indicated in the body of the paper) was due to Cattell and Scheirer (1961). Spielberger and associates felt the need to develop a psychometrically sound instrument to differentiate the two. Through careful psychometric methods they constructed the 40-item (20 A-State, 20 A-Trait) scale. Levitt (1967) considers this scale the best around and to have very sound test qualities.

As Spielberger, et al, (1970) point out, the validity of the STAI is based on the assumption that the person taking the scale understands

the specific instructions: state requiring that he responds how he feels at that moment versus trait which asks him to indicate his general feelings.

The scale is worded so that only a fifth or sixth grade reading level is all that is required to take and understand the scale. It has been balanced for acquiescence set: the A-State scale has 10 directly-scored items and 10 reversed items; the A-Trait has 13 directly-scored items and 7 reversed items. The items are answered on a 1 to 4 scale: the A-State from not at all to very much so; the A-Trait from almost never to almost always. Spielberger, et al, (1970) report a method is available for obtaining a prorated score when 1 or 2 items are omitted; but if 3 or more items are left blank, questionable validity results. The time it takes to administer the scale is 15 to 20 minutes.

Standardization was done on 3,300 college and high school students. Normative data was also obtained for 600 neuropsychiatric and medical patients, as well as 200 young prisoners. Norms are also available on 377 high school juniors. The norms for STAI, form X, are based on 982 Florida State University freshmen and 484 undergraduate students.

There are a great many other groups who have been tested using the STAI. Spielberger, Woodhouse, and Brinkman (1972) have an extensive bibliography of studies using the scale. Test-retest reliability for A-Trait scale varied between .73 - .86.

This scale was selected for this study because it is considered by many authorities to be most useful, well-constructed, and a sound anxiety measure. It is felt that the trait conception of anxiety is very important since high anxiety-prone students (A-Trait) may react to treatments, etc.,

differently than low A-Trait students. The A-Trait was used solely because it was the purpose of this instrument intervention to give the anxiety measure as trait-typical in the subjects.

The second instrument used to pre-post test the subjects was chosen because of its ability to measure the debilitating effects of anxiety on persons in performance situations - in this case, test performance. The Achievement Anxiety Test (AAT) was used for this purpose and while it has two scales, the scale used was the one which measured the debilitating effects of performance related anxiety.

Alpert and Haber (1960), rather than focusing on the disabling aspects of anxiety (Mandler and Sarason, 1952), felt that a scale should be constructed to measure anxiety that facilitated performance as well as hindered performance. Although high levels of anxiety are generally debilitative, in some situations anxiety can aid performance (for very bright students and on simple tasks). The authors feel that there is not necessarily a high negative correlation between debilitating and facilitating anxiety--a person may possess a lot of both or one or neither.

Their measure is specifically designed to tap these two types of anxiety felt in specific achievement situations. It is a 26-item self-report questionnaire with 9 "facilitating" items, 10 "debilitating" items, and 7 buffer items. The items are randomly mixed. The subject rates each item as it applies to him on a five point scale of the type always to never.

The debilitating scale (AAT-) measures item responses indicating behavior which decreases test performance. The facilitative scale (AAT+)

measures item responses that enhance performance. The two scales are independent measures, and the authors report extensive revisions based on item analyses, correlations with relevant criteria, theoretical formulations, etc. This independence was considered important since it allows for the possibility of the absence of both facilitating and debilitating anxiety as well as the presence of either one. The reading level appears to be fairly comparable to Spielberger's STAI. This self-report measure can be administered in 10 to 15 minutes.

The AAT seemed very suitable for the purposes of this study. The interest was in academic situations and this is the type of anxiety that the AAT measures. The debilitative anxiety scale of the AAT has been shown to compare favorably with test anxiety measures. That is the reason it was used as a measure and facilitative anxiety was not studied.

The subjects were chosen from the students who were participating in the College of the Mainland's General Educational Development Testing Preparation program. The control group (N = 15) and the experimental group (N = 15) were chosen in a way which insured that all other variables in the instruction process would be as similar as possible. About a week into the classes, both groups were pre-tested with the STAI (A-Trait scale) and the AAT (debilitative test anxiety scale). Subsequent to this, there was no treatment given to the control group preceeding the post-testing at the end of the sixteen week semester.

The treatment sessions for the experimental group were initiated shortly afterwards. The first step was to do the Relaxation Training for the group. This was done over a time span of several weeks using the

techniques described by Bernstein & Borkovec. The training followed the basic rationale of Progressive Relaxation Training and proceeded through all body sets from number one (dominant hand and forearm) to number sixteen (nondominant foot). When it was empiracally evident to the experimentor that true relaxation according to the prescribed model had taken place and when in the latter weeks of the training, the subjects reported that they could indeed execute the relaxation state at home in anxiety situations as well in the class sessions, the time was right for the next phase.

In phase two, the process moved to the development of the anxiety hierarchy. Although the Willoughby questionnaire was not administered (because the specific maladaptive anxiety was defined for this experiment), much the same process was used in establishing the group anxiety hierarchy in the face of the GED test. In several "brainstorming" sessions, sources of anxiety in the face of the impending testing were isolated and identified on a random basis. Some of the suggested issues were:

-fear of losing a job because of test failure

-fear of ridicule

-fear of loss of positive self concept

-fear of not obtaining a higher job.

After many of the suggested sources had been defined, the Delphi technique was used to set up the anxiety concerns in a rank order from the highest to the least threatening or anxiety producing.

When it was agreed that a true anxiety hierarchy which represented the group consensus was had, the Systematic Desensitization sessions were

held. In these sessions, the subjects were asked to assume positions on the floor or resting against the walls of the room. The bright lights were removed and soft lighting was introduced. The relaxation state was induced and the experimentor proceeded through the anxiety hierarchy. The subjects were asked to signal (by a simple movement of the hand) when the vivid picturing of the anxiety events became uncomfortably threatening. When several such signs were seen, the experimentor asked that the images be ignored and that concentration be given to re-inducing the relaxation state. When all signs were removed, then the hierarchy was proceeded again beginning from a lower level than that which had brought the signs of anxiety. This process was continued until high points in the hierarchy could be reached without excessive anxiety signaling. This procedure again was done for several weeks.

As a culmination to the exercise, on the last night of the sessions, the students were taken from the group meeting setting to the College of the Mainland Testing Center. There had been prepared copies of an actual GED test from discontinued forms (two pages on each of the five tests). The students were put into the actual testing situation with timing and anxiety producing instructions. They were required to take the sample tests and to indicate when debilitating anxiety was felt. At these points there was urging to use the relaxation techniques learned and the external circumstances of threat were lowered. This bogus testing situation was far more threatening than the actual situation to be encountered.

A week after the completion of these experiences, post-testing was done on both the experimental and control groups with both the STAI A-Trait anxiety scale and the AAT using the debilitating anxiety measure only.

SUMMARY TABLE - PRE - POST TEST RESULTS ON EXPERIMENTAL AND CONTROL GROUPS ON THE STAI AND THE AAT

STAI A-TRAIT ANXIETY INVENTORY

EXPERIMENTAL GROUP		CONTROL GROUP	
PRE - TEST	POST - TEST	PRE-TEST	POST - TEST
$\bar{X}$ = 38.43	$\bar{X}$ = 39.36	$\bar{X}$ = 34.77	$\bar{X}$ = 34.31
S = 10.19	S = 12.91	S = 10.17	S = 9.36
	T = .211		T = .12

AAT DEBILITATIVE ANXIETY SCALE

EXPERIMENTAL GROUP		CONTROL GROUP	
PRE - TEST	POST - TEST	PRE - TEST	POST - TEST
$\bar{X}$ = 30.5	$\bar{X}$ = 28.86	$\bar{X}$ = 28.69	$\bar{X}$ = 27.69
S = 5.05	S = 5.14	S = 5.15	S = 6.61
	T = .853		T = .43

Results:

The summary of the results can be seen from table one which follows. The pre-post testing with the STAI and the AAT resulted in T values so low that there was absolutely no significant movement in either the trait level anxiety or the test performance anxiety from pre-testing to post-testing. This was true of both the experimental and control groups.

The third type of evaluation administered was the open-ended opinion questionnaire given the last night to the experimental group which had received the treatment. The four basic questions asked and the number of positive and negative responses are listed below.

DID THE CLASS EXERCISES HELP YOU WITH YOUR FEAR OF TESTS?

Yes: 5
No: 10

DID THE CLASS EXERCISES GIVE YOU A NEW WAY TO RELAX FROM ANXIETY IN OTHER AREAS OF YOUR LIFE?

Yes: 7
No: 8

DID YOU ENJOY THE RELAXATION TRAINING?

Yes: 14
No: 1

WOULD YOU LIKE TO TRY ANOTHER WAY TO REDUCE YOUR FEAR OF TESTS IF THIS ONE WAS NOT TOO GOOD FOR YOU?

Yes: 14
No: 1

A summary of the results of the Systematic Desensitization experiment would be as follows:

1. There was no indication that participation in a GED preparation class increases or decreases either basal trait anxiety or specific academic performance anxiety. This can be seen from the pre-post testing of the control group.

2. There is no indication that the application of the Systematic Desensitization technique of Joseph Wolpe as modified for groups and applied in this experiment increases or decreases either basal trait anxiety or specific academic performance anxiety. This can be seen from the pre-post testing of the experimental group.

3. There is indication that the findings above in 1 and 2 are substantiated by the self reports of the participating subjects.

4. The subjects participating in the experiment did indicate that they enjoyed the experience.

5. The subjects participating in the experiment did acknowledge the need for some fear reduction in the face of the GED test and indicated their willingness to participate in alternate forms of fear reduction training.

Recommendations:

The following are recommendations which have been forwarded to the Director of Adult Basic Education at College of the Mainland:

1. Because of the expressed need for some form of fear reduction training by both the students in ABE-GED participation and the faculty of the program, it is recommended that there be offerings made for those students who express the need and the desire to participate.

2. It is recommended that Systematic Desensitization not be used as one of the modalities in the future fear reduction training for there is sufficient data from this study to indicate that it is not a suitable mode for these subjects.

3. It is recommended that alternate forms be made available (group encounter, dyadic sessions with prescribed contractural behavioral contracts, etc.) and that this be done on such an organized basis that proper evaluation can be done to decide on the optimum mode and supporting ancillary modes.

4. It is recommended that the availability of such sessions be used and publicized as an incentive of recruitment to bring in those persons who have such fear that might keep them from the program. (see attached brochure in Appendix)

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